

Claims

1. (Original) Method for heat treating cast parts produced from a light metal melt, in particular an aluminium melt, wherein the cast part is quenched after an annealing treatment or is quenched from the casting heat, after quenching is cooled to a low temperature and following low temperature cooling is suddenly heated to a high temperature in that it is immersed in a salt melt, of which the temperature is above the boiling temperature of water at normal pressure.
2. (Currently Amended) Method according to Claim 1,
wherein
~~characterised in that~~ the cast part is quenched with the aid of water.
3. (Currently Amended) Method according to Claim 1 ~~either of the preceding~~
~~claims,~~
wherein
characterised in that the low temperature is less than -180°C .
4. (Currently Amended) Method according to Claim 1 ~~any one of the preceding~~
~~claims,~~
wherein
~~characterised in that,~~ for cooling to the low temperature, the cast part is immersed in liquid nitrogen.
5. (Currently Amended) Method according to Claim 1 ~~any one of the preceding~~
~~claims,~~
wherein
~~characterised in that~~ the cast part is cooled to the low temperature until its core temperature is substantially equal to the low temperature.

6. (Currently Amended) Method according to Claim 1 ~~any one of the preceding~~
~~claims,~~
wherein
~~characterised in that~~ the salt melt is heated to at least 150°C.
7. (Currently Amended) Method according to Claim 6,
wherein
~~characterised in that~~ the salt melt is heated to at least 250°C.
8. (Currently Amended) Method according to Claim 1 ~~any one of the preceding~~
~~claims,~~
wherein
~~characterised in that~~ the salt melt has a salt concentration of at least 98% by
weight.
9. (Currently Amended) Method according to Claim 1 ~~any one of the preceding~~
~~claims,~~
wherein
~~characterised in that~~ the nitrates and/or chromates, in particular alkali metal
nitrates and chromates or alkaline earth metal nitrates and chromates, such as
NaNO₃, KNO₃ or Na₂CrO₄, are used as the salts.
10. (Currently Amended) Method according to Claim 1 ~~any one of the preceding~~
~~claims,~~
wherein
~~characterised in that~~ the cast parts are cylinder heads.
11. (Currently Amended) Method according to Claim 1 ~~any one of Claims 1 to 9,~~
wherein
~~characterised in that~~ the cast parts are motor units.